

Results
of
Dr. E. MJÖBERG'S
Swedish Scientific Expeditions
to
Australia 1910—1913.

9.

Cicindelidæ, Gyrinidæ, Lucanidæ, Paussidæ

by
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With 11 Figures in the Text.

Communicated January 12th 1916 by CHR. AURIVILLIUS and Y. SJÖSTEDT.

Fam. Cicindelidæ.

Of this family 52 species have been recorded from Australia, belonging to the genera *Megacephala* (18), *Distipsidera* (7), *Rhysopleura* (1), *Nickerlea* (1) and *Cicindela* (25). The genera *Nickerlea* and *Rhysopleura* are both endemic in Australia; so is also the genus *Distipsidera*, except one of its species, *D. papuana* GESTRO., from New Guinea.

The present material contains 203 specimens, representing 19 different species. Two of these are new and very interesting forms. The number of Australian species is thereby brought up to 54.

1. *Megacephala crucigera* MACL. — Three specimens, 2 ♂♂ and 1 ♀, taken under stones on the damp banks of the Fitzroy River not far from Noonkanbah in the interior of the Kimberley District, January 1911. The same habits of

life have been previously recorded by SLOANE from MARSTER'S observations on the Burnett River at Gayndah in Queensland. The species is apparently distributed all over the northern parts of Australia.

2. *Megacephala intermedia* SLOANE. — Four specimens, 1 ♂ and 2 ♀♀, taken at the Fitzroy River near Noonkanbah, February 1911, and living in exactly the same way as *M. crucigera* MACL.

The species has been recorded before from Kings Sound and Carnot Bay i Northwest Australia. Apparently it is found also in the interior parts of the Kimberley District.

3. *Megacephala basalis* MACL. — Abundant in the interior parts of the Kimberley District, especially on the northern slopes of the St. George Range, where I saw swarms of them running by night on the damp ground near the small so called «Pandanus Springs», February 1911. Distributed all over the tropics of Australia.

4. *Megacephala Bostocki* CAST. — Two specimens, 1 ♂ and 1 ♀, from the damp banks of the Fitzroy River, November 1910. The species is easily differentiated from all other by the very deep concavity on the metepisterna. The female has the inflexed border decidedly excised opposite the third ventral segment, but the male does not show any trace whatever of that character. Distributed all over the tropics of Australia.

5. *Megacephala Australasiae* HOPE. — One female taken at Derby in Nordwest-Australia, October 1910. It measures 15 mm., and is of the ordinary type.

In the collections of the Swedish State Museum there are two large female specimens of a *Megacephala* labelled «Queensland». Their length is not less than 20 mm., the colour is much darker, and the black of the elytra more distributed. The sculpture of elytra is markedly wavy-rugose-punctate, and the row of larger punctures much more strongly marked. But otherwise there are no distinguishing characters from the ordinary type of the species *Australasia* HOPE. That is why I regard them as merely a variety of this very variable species.

6. *Megacephala kimberleyensis* n. sp. (Fig. 1). — A species with a beautiful metallic sheen, well differentiated from all those hitherto described.

Brilliant metallic green and blue, legs, antennæ and most of the mouth-parts, and a very narrow apical margin pale yellowish, head between eyes dark, except a green narrow stripe just near the interior margin of the eye, with two not very deep longitudinal impressions, antennæ long and slender, the four first joints naked and shiny, the other ones covered

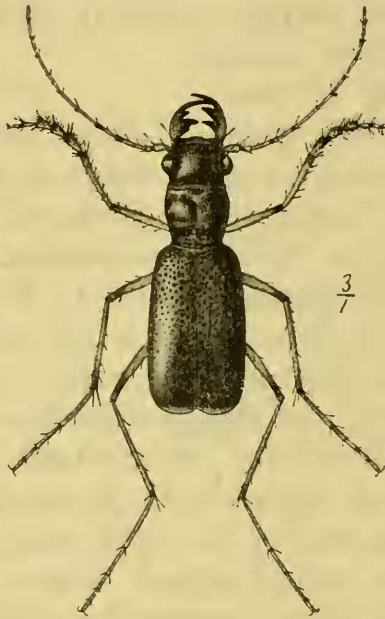


Fig. 1. *Megacephala kimberleyensis* MJÖB. n. sp.

by dense fine hairs, mandibles strong, the left one with a smaller tooth behind the third (the apex itself being reckoned as the first!), at the inner margin and on the teeth infuscate, labrum infuscate at the anterior margin, in ♂ the median prolongation more pronounced than in ♀; prothorax distinctly tapering towards the base, disc dark, surrounded by metallic green on all sides, in front and at base greatly impressed transversally, the part between the anterior, finely ciliated anterior margin and the anterior transversal impression more or less fuscous; a lateral carina is present, and runs from the anterior margin to about the middle of the

side. The elytra are much more narrow at the base than on the top, very convex, entirely metallic blue, except the very extreme apical margin, which is yellow; firmly grown together, on the basal half strongly and thickly punctured, the punctures becoming more and more obsolete towards apex, one row of larger punctures distinctly visible, the tips softly rounded; wings rudimentary, reduced to small triangular appendices. Legs very long, pale yellowish, the knees slightly infuscate, the coxæ fuscous, on the ventral side the head, the prothorax, the sternum, and the two first abdominal segments (♂ and ♀) metallic blue or green, the other segments dark with posterior margin narrowly pale, the last segment with a broader yellow margin.

Length of body 16 mm.

Of this beautiful species I have taken five specimens, 3 ♂♂ and 2 ♀♀, under stones, where it burrows holes in the damp sand on the banks of the Fitzroy River in the vicinity of Noonkanbah in the Kimberley-District.

The species is apparently allied to *M. castelnaui* SLOANE, but differs by the lateral carina on prothorax, extending further backwards, the fuscous part of prothorax between the anterior margin, and the anterior transversal impression, the deep blue elytra, the rudimentary wings etc. It also shows affinity to *M. marginicollis* SLOANE, but differs by the incomplete lateral border of the prothorax, the pale, testaceous femora, the elytra being widest behind middle, and of a uniform deep blue colour, except the extreme apical margin, with the punctures distinctly extending behind the middle etc.

7. *Distipsidera flavicans* CHAUDOIR. -- One single female taken at Colosseum in South-Queensland, November 1912.

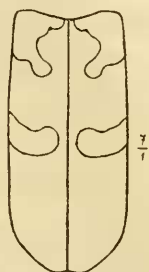


Fig. 2. Marks of elytra of *Distipsidera parva* MACL.

8. *Distipsidera parva* MACL. (Fig. 2). — It is only with some hesitation that I refer two female specimens from Ather-ton, North Queensland (January 1913) to this species. They are of the same size and elytra with the same markings (see Fig. 2), but labrum has a broad piceous margin instead of a narrow one.

9. *Distipsidera Gruti* PASCOE. —

Two specimens (♂ and ♀) from Herberton, North Queensland, February 1913.

10. *Distipsidera flavipes* MACL. —

A very common species on the Atherton-Herberton tableland, where it is to be found hunting on the trunks of the trees in the open forest country in the beginning of the year.

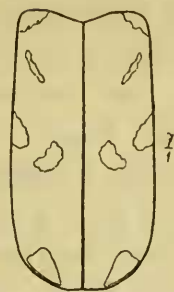


Fig. 3. Marks of elytra of *Distipsidera undulata* WESTW. var. (Mus. Holm.).

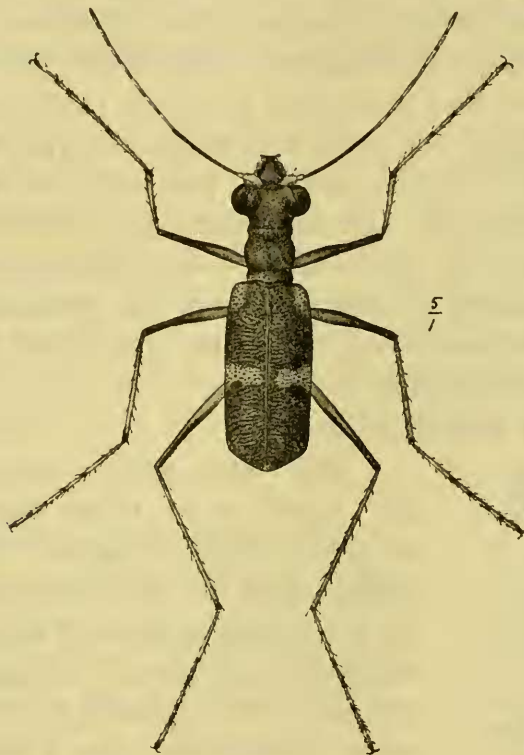


Fig. 4. *Distipsidera sericea* MJÖB. n. sp.

11. *Distipsidera sericea* n. sp. (Fig. 4). — A very characteristic species which can be immediately differentiated from all the species described by its green colour.

Body narrow and slender, legs very long. — Head, except mouth-parts, prothorax and elytra, except some yellowish-

In the collections of the Swedish State Museum there are also two specimens of a *Distipsidera*, labelled «*Distipsidera* n. sp.» The markings of the elytra are shown in Fig. 3; so far as I can judge, it is merely a variety of *D. undulata* WESTW. As locality is given: Peak Down.

white markings, sericeous, dark greenish; eyes very large and prominent, head between eyes excavated, longitudinally striated, the striation between root of antennæ transversal, labrum black on each side with a wide central vitta white, with three large lateral teeth and three smaller apical ones, the median one a trifle larger, mandibles white with black tips; antennæ slender, the two basal joints white, slightly infusate on the back, the third and fourth ones very dark, the following ones lighter, prothorax narrow, constricted in front and at base, with a deep transversal impression in front and at base and a median not very deep line, on the disc transversally striated; elytra elongate, the shoulders not prominent, slightly rounded, dark green, somewhat shiny, except the humeral corner and a median (lateral) fascia which are more yellow; the legs are pale yellowish, the femora broadly infusate at their distal portion, but only on the inside; this is also the case with the tarsi throughout their whole length; the apical end of the tarsal joints slightly darker; as for the under surface, prosternum and the episterna are like the meso- and metasternum, metallic green, on the abdominal segments more metallic blue.

Length of body: 10 mm.

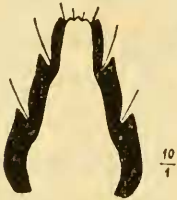


Fig. 5. Labrum of
Distipsidera sericea
MjöB. n. sp.

The only green species known, all the other ones being dark with yellow or white bands or spots. The most interesting fact is, that this new form lives on the mossy trunks of the scrubtrees, on which it runs about. Thanks to its green colour, it is very hard to detect. It illustrates beautifully the biological conception «protective colour». All the other

Australian species belong to the open forest country, where they live on the trunks of different trees, eucalyptus, etc. A green colour seems to be very common among jungle animals, whether mammals birds, or insects; thus for instance, one of the phalangers, *Pseudochirus Archeri* COLL. is more or less green with two silvery stripes on the back. It is the only one that runs about in the daytime, being well aware of its protective dress.

I have taken four specimens (3 ♂♂, 1 ♀) at Malanda, North Queensland, into deep jungle or «scrub», February 1913.

12. *Cicindela Doddi* SLOANE. — Of this species, fairly recently described, I have taken one male specimen at Herberton, North Queensland, January 1913.

13. *Cicindela trivittata* MACL. — A very common species in the vicinity of Derby in the Kimberley District in Northwest Australia, where swarms can be seen running about on the sandy shores, October 1910. Hitherto recorded only from Northwest Australia.

14. *Cicindela albolineata* MACL. — Also a common species in the coast belt of Kimberley, November 1910. Hitherto recorded only from King Sound in Northwest Australia.

15. *Cicindela Frenchi* SLOANE. — Not uncommon in the interior of the Kimberley District, Noonkanbah, February 1911. — In SLOANE'S «Revision of the Cicindelidæ of Australia», Proc. Linn. Soc. N. S. W. 1906, the female of this species is said to have «Labrum not unidentate». As a matter of fact, there is always a small median tooth present, although not always so easily visible, when viewed from in front. — Hitherto recorded only from the northwestern parts of the continent.

16. *Cicindela rafflesia* CHAUDOIR. — It is only with some hesitation that I refer two male specimens to this species. The patterns of elytra are shown in Fig. 6. Kimberley District, Noonkanbah, February 1911.



17. *Cicindela semicineta* BRÜLLÉ. Fig. 6. *Cicindela rafflesia* CHAUD. ♂, specimen from Kimberley, N. W. Australia. — Common at Atherton and Malanda, North Queensland, January 1913. — The species has a wide distribution, extending from Java (?), Dama-Islands, Kei, New Guinea, the Bismarck Archipelago, New Caledonia, the New Hebrides over a large part of eastern Australia.

18. *Cicindela discreta* SCHAUM. v. *Froggatti* MACL. (Fig. 7). — One female from Noonkanbah in the interior of the Kim-

berley District. — Belongs to the Malayan species, with very wide distribution.

19. *Cicindela Mastersi* CASTELNAU (Fig. 8). — To this somewhat variable species I refer three specimens (1 ♂, 2 ♀♀) from the interior of the Kimberley District, January 1911.

W. HORN considers the two forms *C. catoptriola* HRN and *C. plebeja* SLOANE synonymous and as belonging to this species. Two of my specimens are darker, the prothorax is less rounded on the sides, the prosternal episterna blue and smooth, and the median tooth of labrum in the female much more strongly developed. It agrees well with SLOANE'S description of *C. plebeja* SLOANE. The only difference is the colour marks of elytra, there being only one small median

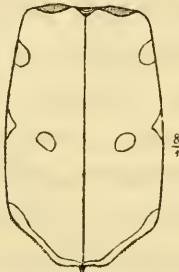


Fig. 7. Marks of elytra
of *Cicindela discreta* SCHAUM.
v. *Froggatti* MACL.

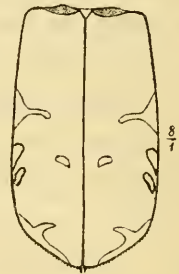


Fig. 8. Marks of elytra
of *Cicindela Mastersi* CAST.

fascia, a white rounded spot behind the middle of the disc, and a small apical lunule, the humeral lunule being entirely absent. The male has a small white lateral spot between the median fascia and the apical lunule, being the last rest of its posterior branch. — In the third specimen the prothorax is a little more rounded, the colour of the upper surface more bronzy. As regards the marks of the elytra (Fig. 8), there is a small humeral marginal spot not visible from above, a median fascia extending to the middle of the disc, two small white spots behind it, one round posterior discal spot and a large apical lunule. It agrees in the marks of the elytra with the typical *C. Mastersi* CASTELNAU, with which species both *C. catoptriola* HRN and *C. plebeja* SLOANE are synonymous.

Fam. Gyrinidæ.

From the Australian continent 19 species of this family have hitherto been recorded. They belong to the following four genera and species:

Dineustes M'LEAY.

1. *D. australis* F.
2. *D. caliginosus* RÉG.
3. *D. inflatus* BLACKB.
4. *D. neoguinensis* RÉG.

Aulonogyrus RÉG.

1. *A. strigosus* F.

Gyrinus GEOFFR.

1. *G. convexiusculus* M'LEAY.
2. *G. Simoni* RÉG.

Macrogyrus RÉG.

1. *M. angustatus* RÉG.
2. *M. australis* BRÜLLÉ.
3. *M. elongatus* RÉG.
4. *M. Gouldi* HOPE.
5. *M. Howitti* CLARK.
6. *M. iridis* HOPE.
7. *M. oblongus* BOISD.
8. *M. paradoxus* RÉG.
9. *M. Reichei* AUBÉ.
10. *M. Simoni* RÉG.
11. *M. striolatus* GUÉR.
12. *M. venator* BOID.

My own material contains about 300 specimens, representing three different genera and seven species, one of which seems to represent a new form.

1. ***Dineustes australis* F.** — I have taken about fifty specimens of this widely distributed species, partly in the interior of the Kimberley District at Noonkanbah (Nov. 1910), partly in Queensland at Atherton, Cedar Creek, Malanda, Bellenden Ker (1913).

The species has a very wide range extending all over the Malayan Archipelago, Australia, New Zealand and New Caledonia.

2. ***Macrogyrus Howitti* CLARK.** — To this species I refer a large male specimen (12 mm.) caught in a little pool in the interior of a dense rain-forest at Mapleton on the Blackall Range (Sept. 1911).

The body is more uniformly dark with bronzy colour, the head bluish-green. Of the striæ only the one close to the border, and another one a little further in on the disc, continuing only a little behind the middle and composed of

elongated points, are developed. Otherwise it agrees well with the figure given by RÉGIMBART (Ann. Soc. Ent. Fr. 1882, Pl. 12, Fig. 56).

3. *Macrogyrus rivularis* CLARK. — Of the typical form I have taken specimens at Glen Lamington, on Mt. Tambourine and on the Blackall Ranges in southern Queensland (Sept.—Oct. 1911). In most of them the internal stria is very obsolete, hardly noticeable.

This form has been placed as a variety of *M. oblongus* BOISD. but in my opinion there are good reasons for keeping both separated from each other.

4. *Macrogyrus paradoxus* RÉG. — The specimens are from the interior of Cap York Peninsula not far from Alice River, September 1913. One specimen from Noonkanbah in the interior of Kimberley. The species was originally described from Australia without any details, as has been the case with so many of the Australian insects. FROGGATT (Australian Insects, p. 135) gives the locality «North West coast of Australia» and «Southern Queensland». Thus it seems to be widely distributed on the Australian continent.

This species should most probable be separated from the other ones and placed in a special sub-genus.

5. *Macrogyrus oblongus* BOISD. — Several specimens from Atherton, Evelyne, Cedar Creek, Yarrabah and Bellenden Ker, North Queensland. — FROGGATT (Australian insects, p. 135) records the species from «the vicinity of Sydney», New South Wales.

6. *Macrogyrus viridisulcatus* n. sp. — Body large, elongated-oval, flat, richly metallic coloured; head (with labrum and clypeus) and thorax more or less bronzy greenish, the latter mostly with a blue band opposite the scutellum. Legs especially in ♂ very long, the anterior margin of femora finely serrated, a character which recalls the species of the genus *Enhydrus* CAST.; the first tarsal joint in ♂ very long and broad, as long as the second and first combined; inside of tibiæ provided with dense yellow hairs. Scutellum with a slight median impression. Elytra broad and flat, the margin

distinctly curved up and forming as it were a lateral furrow. Of the six well developed striæ, the four external ones form very deep and broad sulci separated from each other by ridge-like interstices. At the bottom these sulci seem to be, at least when viewed from above, quite uncoloured, dull black, but viewed from the side, they are light greenish, the elevated interstices bluish; the fifth and sixth are separated by very broad and flat transversally striated interstices, bright golden green of the same colour as the sulciform border. The naked eye then only sees these three golden greenish lines; a little

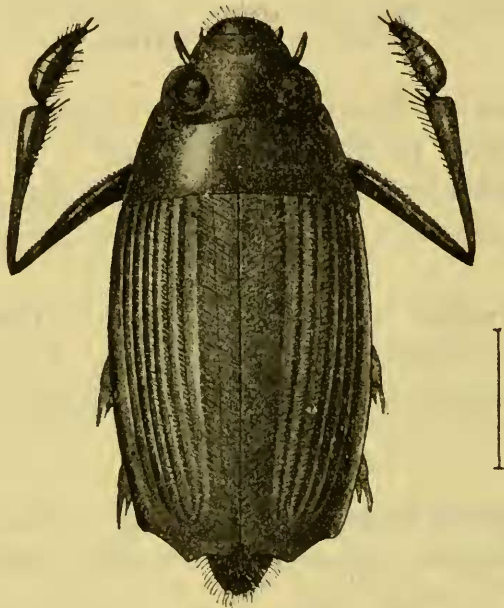


Fig. 9. *Macrogyrus viridisulcatus* MjÖb. n. sp.

further in nearer to the suture one sees the indistinct traces of another stria; the tips are of the same type as in *M. rivularis* CLARK. The ventral side of the body is uniformly shiny black, the posterior margin of the three last segments rufous; the epipleuræ are entirely metallic.

Length: 14—15 mm. Breadth: 7 mm.

Apparently, nearly related to the *rivularis-Reichei*-group, but of larger size and the elytra with differently shaped sulci.

I have caught quite a number of this very characteristic species in the smaller creeks at Malanda, Evelyne and Cedar Creek in North Queensland (Febr.—June 1913).

7. *Aulonogyrus strigosus* FABR. — A very common and widely distributed species. My specimens are from Christmas Creek, Colosseum (South Queensland) and Evelyne (North Queensland), Dec. 1912, April 1915.

The natives at Evelyne and the Atherton-Herberton tableland catch swarms of this beetle by means of their «dillybags», roll them up in leaves, roast them in the hot ashes and eat them. They call this «food» «molkom».

Fam. Lucanidæ.

The number of *Lucanidæ* found in Australia up to date is 36, representing 12 different genera.

My own material contains about 70 specimens in 8 different species, one of them being a new form.

1. *Rhyssonotus nebulosus* KIRBY. — This species seems to be common in Southern Queensland. I have caught numerous specimens in dead logs on the ground at Colosseum, November 1912.

2. *Cacostomus squamosus* NEWM. — One male and two females from Herberton and Atherton in North Queensland, January and February 1913.

3. *Neolamprima mandibularis* M'LEAY. — Quite common in the Atherton-Herberton tableland. As LEA (Royal Soc. Vict. 1910, p. 129—130) has observed, this species varies to a remarkable extent in the development of the mandibles of the male and the colours of the female. The mandibles in some of my male specimens measure 12 mm., in some others only 4 mm. The corresponding length of body (prothorax + elytra) is 25 mm. and 15 mm.

Numerous specimens at Atherton, Carrington and Tolga, January—June 1913.

4. *Phalacrognathus Mülleri* M'LEAY. — Of this very beautiful species there are two males from Evelyne on the Atherton-Herberton tableland, January 1913. The larva lives

in the dead «cedar» logs on the ground, where also the developed beetle is to be caught.

5. *Figulus regularis* WESTW. — Several specimens from Christmas Creek and Colosseum, South Queensland, October 1912.

6. *Figulus lilliputanus* WESTW. — Two specimens from Fremantle, West Australia, I refer to this form. They agree well with WESTWOOD's description in general, but the head is not so broad as in his figure.

The type specimens were taken near Adelaide in South Australia.

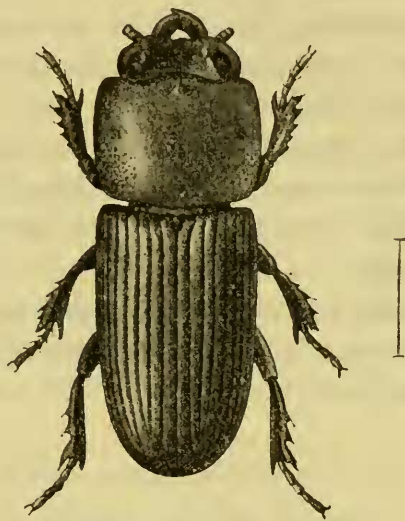


Fig. 10. *Figulus tambourinensis* MJÖB. n. sp.

7. *Figulus tambourinensis* n. sp. (Fig. 10). — Body small, shiny, of characteristic shape. Head fairly large and broad, concave, almost invisibly punctured, the ocular canthus broadly rounded, prothorax distinctly broader than wide, very finely punctured, the anterior margin high with a distinct median tubercule, the sides more distinctly punctured with a distinct impression; in the middle there is a strong impression with large punctures forming three different lines. The posterior angles rounded, elytra nearly twice as long as prothorax but not so broad, with the humeral angles sharp; the striae are nine in number, but only the first six ones are distinctly developed and separated by broad and flat interstices with almost invisibly fine punctures, slightly im-

pressed on each side of the suture, the punctures in the bottom of the striæ only slightly apparent, the seventh, eighth and ninth striæ very obliterate, the punctures visible only in the middle, gradually disappearing towards base and apex, which is strongly punctured.

Length of body: 13 mm.

Breadth of elytra: 4 mm.

I have been unable to identify this species with any of those described. In some points it seems to agree with *F. nitens* WESTW., but differs undoubtedly in the entirely black head, the sculpture of prothorax, and striæ of the elytra.

Two specimens from Mt. Tambourine, October 1912.

8. *Figulus striatus* OL. — As a local variety of this old species I must class six specimens from the rain-forests of West Queensland (Bellenden Ker and Yarrabah). They only differ from the typical form by having the head a little more distinctly punctured, and the longitudinal impression on prothorax a trifle deeper and more deeply punctured.

The species seems to have been recorded from Mauritius, Ile de France, and Bourbon. In the collections of the Swedish State Museum there are typical specimens also from «Ind. or», so the species is apparently spread over a greater area than was supposed.

Fam. Paussidæ.

The material of *Paussidæ* collected by me in Australia is, owing to the rareness of these beetles, very small, comprising only three specimens representing two different species. Nevertheless it is of greatest interest, one of the two forms being hitherto known only from the single type specimen, the other one representing a new and interesting form of the genus *Arthropterus* MAC LEAY.

1. *Megalopaussus amplipennis* LEA. — Only some years ago this remarkable form was described by LEA from a specimen taken by DODD at Kuranda not far from the place where I caught my specimen.

This curious form apparently represents another of the primitive forms so plentifully met with in Australia. The

structure of the antennæ is totally different to that ordinarily prevailing among the *Paussidæ*, the full number of joints of the antennæ still being in existence, although the second one is very small and rudimentary. All the other joints are quite normally developed, only showing a slight tendency of being laterally compressed.

Also in regard to the legs, this form seems to show primitivity, the tibiæ being very little dilated and the tarsi simple.

The species reminds one slightly of the Asiatic genus *Protopaussus* GESTRO, although the shape of prothorax is quite different.

Like that genus, the antennæ have the full number of joints, which are only slightly compressed. It falls naturally within the group *Protopaussidæ* GESTRO, representing the most primitive forms of the family *Paussidæ*, the relationship of which to the *Carabidæ* now seems to be beyond doubt.

In JUNK & SCHENKLING's *Coleopt. Catalogus* 1900 GESTRO places this form among the *Cerapterini*, which should be rectified.

One single specimen taken by the author under a log at Evelyne, Atherton-Herberton tableland, North Queensland, April 1913.

2. *Arthropterus cerapteroides* n. sp. (Fig. 11). — Brilliant dark reddish-brown, with very fine punctures. Eyes large and prominent, head fairly broad, slightly impressed between the eyes, with scattered punctures, posterior angles prominent and clothed with stiff hairs; antennæ very large and broad, slightly increasing in width from the second to the ninth, each of these joints at least five times as broad as long, their angles sharply produced, the last joint not quite so broad, rounded towards the apex, all the joints provided with short hairs. Prothorax distinctly broader than long, the anterior angles quite rounded, the anterior margin slightly emarginated, subcordiform, suddenly tapering towards the base, the breadth there about equal to the length, on the disc two small impressions, a median line lightly impressed in the middle; finely ciliated. Legs extremely broad, reminding one of certain species of the genus *Cerapterus*, anterior tibiæ distinctly excised at the apex, rufous, partly infuscated.

Elytra glabrous, subtruncate at the apex and distinctly and sharply notched at the external angle; the inflexed border hairy with distinct and thickly studded punctures, and a little higher up on the very margine a row of larger punctures, each of them bearing a longer hair; posterior margin of ventral segments reddish-rufous.

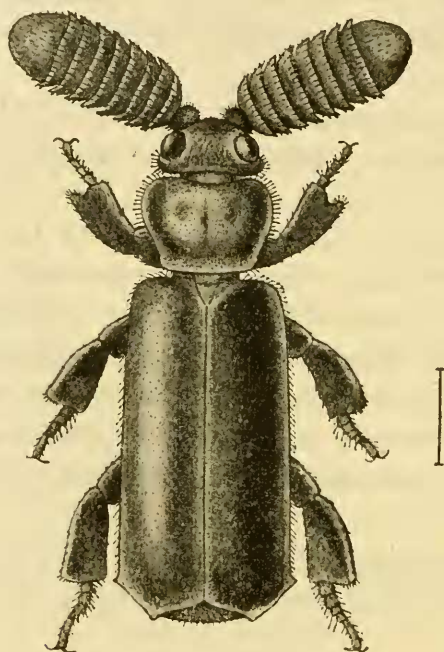


Fig. 11. *Arthropterus cerapteroides* MjÖB. n. sp. (nat. size).

Length of body:	10	mm.
Breadth » »	4	»
Length of antennæ:	4	»
Breadth » »	1,5	»

Two specimens taken on Mt. Tambourine on trunks of trees by lime-light, at night, October 1912.

On account of the shape of prothorax, I refer this distinct species, diverging from all other hitherto known by its very broad prothorax, to this genus; otherwise it shows a remarkable likeness to the genus *Cerapterus*, in the shape of the antennæ and the legs, etc.

Tryckt den 6 april 1916.